

SPECIAL OPTION

H79-5340A

**MODIFICATIONS
OPERATION AND
SPECIFICATION
CHANGES**



**HEWLETT
PACKARD**

I N T R O D U C T I O N

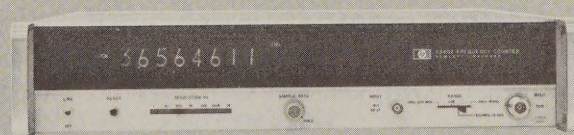
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IN ALL OTHER RESPECTS THIS INSTRUMENT IS ELECTRICALLY IDENTICAL TO THE STANDARD INSTRUMENT AND HAS THE SAME SPECIFICATIONS UNLESS OTHERWISE INDICATED IN THIS SUPPLEMENT. THEREFORE, INFORMATION IN THE STANDARD OPERATING AND/OR SERVICE MANUAL ALSO APPLIES TO THIS SPECIAL INSTRUMENT.

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5340A Option 006 Microwave Limiter



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5340A OPTION 006 MICROWAVE LIMITER

OPERATING AND SERVICE MANUAL

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5340A OPTION 006 MICROWAVE LIMITER

1-1. INTRODUCTION

1-2. This manual provides information pertaining to the specifications, operation, removal, testing, and installation of the Microwave Limiter in the 5340A Frequency Counter.

1-3. SPECIFICATIONS

1-4. Table 1-1 is a chart of the new specifications for the 5340A Frequency Counter with the Microwave Limiter installed.

Table 1-1. 5340A Specifications with Option 006 Installed

	5340A
DAMAGE LEVEL	+39 dBm (8W), 500 MHz - 6 GHz
CW	+36 dBm (4W), 6 - 18 GHz
SENSITIVITY	-31 dBm, 500 MHz - 10 GHz -24 dBm, 10 - 18 GHz
SWR TYPICAL	<2:1, 500 MHz - 12.4 GHz <3:1, 12.4 - 18 GHz
OPTION 006 COMPATIBILITY	Cannot be ordered with Option 002 Rear Inputs or Option 005 23 GHz Frequency Range. Please consult factory special to combine these options.

1-5. OPERATION

1-6. Operation of the 5340A Frequency Counter remains unchanged except as specified in Table 1-1.

1-7. REMOVAL

1-8. To gain access to the Option 006 for installation or removal, remove the top cover, bottom cover, and front frame.

1-9. Top cover removal:

- Place the 5340A with top cover facing up.
- Remove the screws on the top cover. Slide the top cover back and off.

1-10. Bottom cover removal:

- Place the 5340A with bottom cover up.
- Remove the screws on the bottom cover. Slide the bottom over back to unseat its front edge then lift off. For rack mounted units, the filler strip need not be removed. In some cases it may be necessary to slightly loosen the filler strip to remove the bottom cover.

1-11. Side frame removal:

- Place the 5340A with the right side frame facing up.
- Remove the screws and lift out the green side panel.

- c. Remove the adhesive side trim that covers the rack mount location.
 1. In preparation for step two, protect the side rail with tape or cardboard.
 2. Slowly (carefully) pry and lift with a blade at the gap at the top of the side rail.
- d. Remove the screws from the right side frame. Lift off the side frame.

NOTE

When removing or installing the limiter refer to *Figure 1-1*.

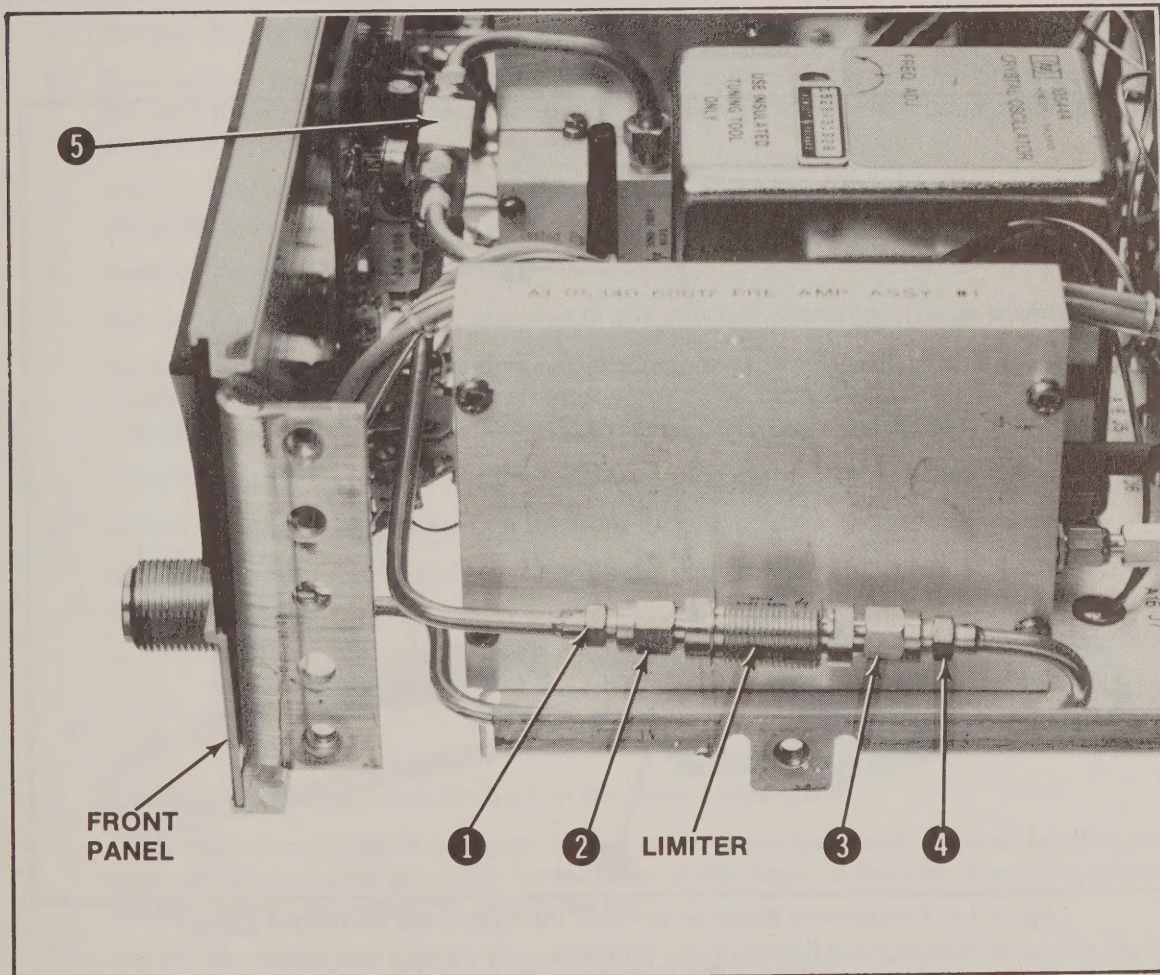


Figure 1-1. Option 006 Installation (Right Side View)

1-12. To remove the limiter:

- a. Hold the connector at point ① stationary with a 1/4-inch open end wrench.
- b. Loosen at point ② with a 5/16-inch open end wrench. Disconnect.
- c. Hold the connector at point ④ stationary with a 1/4-inch open end wrench.
- d. Loosen at point ③ with a 5/16-inch open end wrench. Disconnect.

1-13. INSTALLATION

1-14. To install the limiter, reverse the procedures listed in paragraph 1-12.

NOTE

The limiter is nondirectional. It may be inserted into the circuit in either direction.

1-15. The following parts have been deleted to incorporate the Option 006 Microwave Limiter.

- Cable Assembly, INP 05340-60028
- Panel, Front 05340-00034

1-16. Figure 1-2 shows the components required to install the Option 006 Microwave Limiter in the 5340A Microwave Counter.

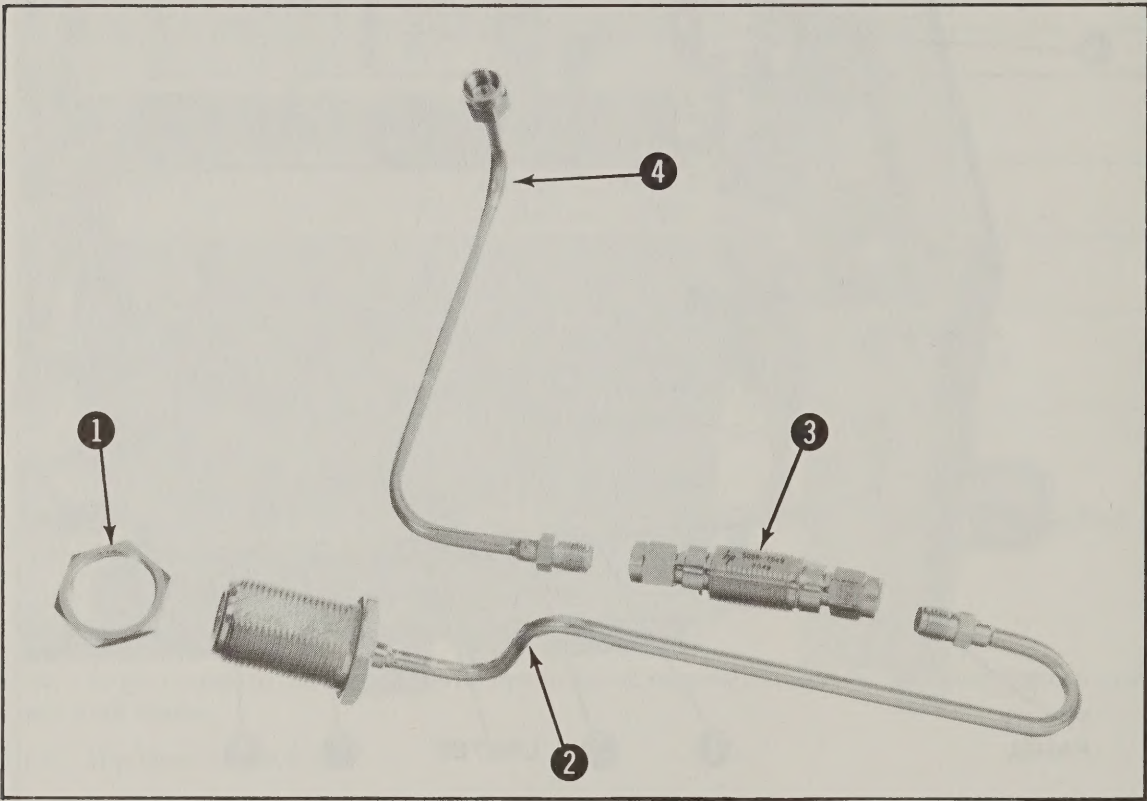


Figure 1-2. Components Required to Install the Option 006 Microwave Limiter

Table 1-2. Part Descriptions for Figure 1-2.

Item	Description	Part Number
1	Hex Nut, 5/8", 24THD, brass, Nickel Plated	2950-0079
2	Cable Assembly	8120-3341
3	Microwave Limiter	5088-7049
4	Cable Assembly	8120-3340

1-17. RETROFIT INSTALLATION

1-18. To install all components listed in *Table 1-2* use the following procedures.

1-19. These procedures describe how to change the front panel trim strip and semi-rigid coax and associated connectors to the Option 006 configuration.

1-20. Front Panel Change

1-21. The following procedure is recommended for changing the front panel trim strip on the lower half of the front panel.

- a. Remove the top and bottom covers (as described in paragraphs 1-9 and 1-10).
- b. Remove the type "N" input connector. Use slip joint pliers for the type "N" connector and a 5/16-inch wrench for the SMA connector. Care must be taken when using pliers to avoid scratching the front panel.
- c. Use a 1/4-inch open end or box end wrench to remove the nut at the top of the A3 HI-Z Input Amplifier Board Assembly.
- d. Remove the A25 Display assembly.
- e. Remove the sample rate knob (set screws fit .050-inch hex wrench) and range knob (pulls off).
- f. Remove the hex nuts on the sample rate potentiometer, reset switch, and line switch. Note which nut came off the line switch and which came off the reset switch. They are not interchangeable but are similar and as such could be forced onto the wrong threads.
- g. Place heavy tape on the front of the handles to protect the brushed aluminium finish.
- h. Lift the instrument and position on the front handles to allow access to the bottom.
- i. In preparation for removing the A3 HI-Z Input Amplifier Board Assembly, disconnect the wires listed below:

+15	red	-5	white/violet
+5	white/red	INH	white/yellow
-15	violet	J1 out	A3J1 Coax

- j. Unsolder the connection at the back of the input connector.
- k. Use a 7/16-inch end wrench to loosen the nut on the input connector. To avoid bending the push on terminal pins, grind the curved sides of the head on the end wrench to permit enough wrench movement to loosen the nut.
- l. Lift out the board and remove the remaining two nuts and the lockwasher on the input connector. Use 7/16-inch and 1/2-inch wrenches.
- m. Pull out the connector and the trim strip will drop out of the front panel.
- n. Position the instrument bottom side down with the front panel facing operator.
- o. Install new trim strip (05340-00038). Remount sample rate potentiometer.
- p. Install line and reset switches.
- q. Mount and properly position the Sample Rate knob [arrow on the knob points to Hold and the potentiometer is FCW (switch on the back of the potentiometer is closed)].
- r. Push the knob onto the Range selector switch.

1-22. Option 006 Installation

1-23. Figure 1-2 illustrates how the various parts are interconnected and Figure 1-1 shows a completed installation.

- a. Remove right hand side rail.
- b. To install the semi-rigid coax with the type "N" input connector, flex the front panel forward by pressing on the front of the A1 Preamp assembly housing and the edge of the front panel with thumb and forefinger and insert the connector into the front panel (refer to Figure 1-3).

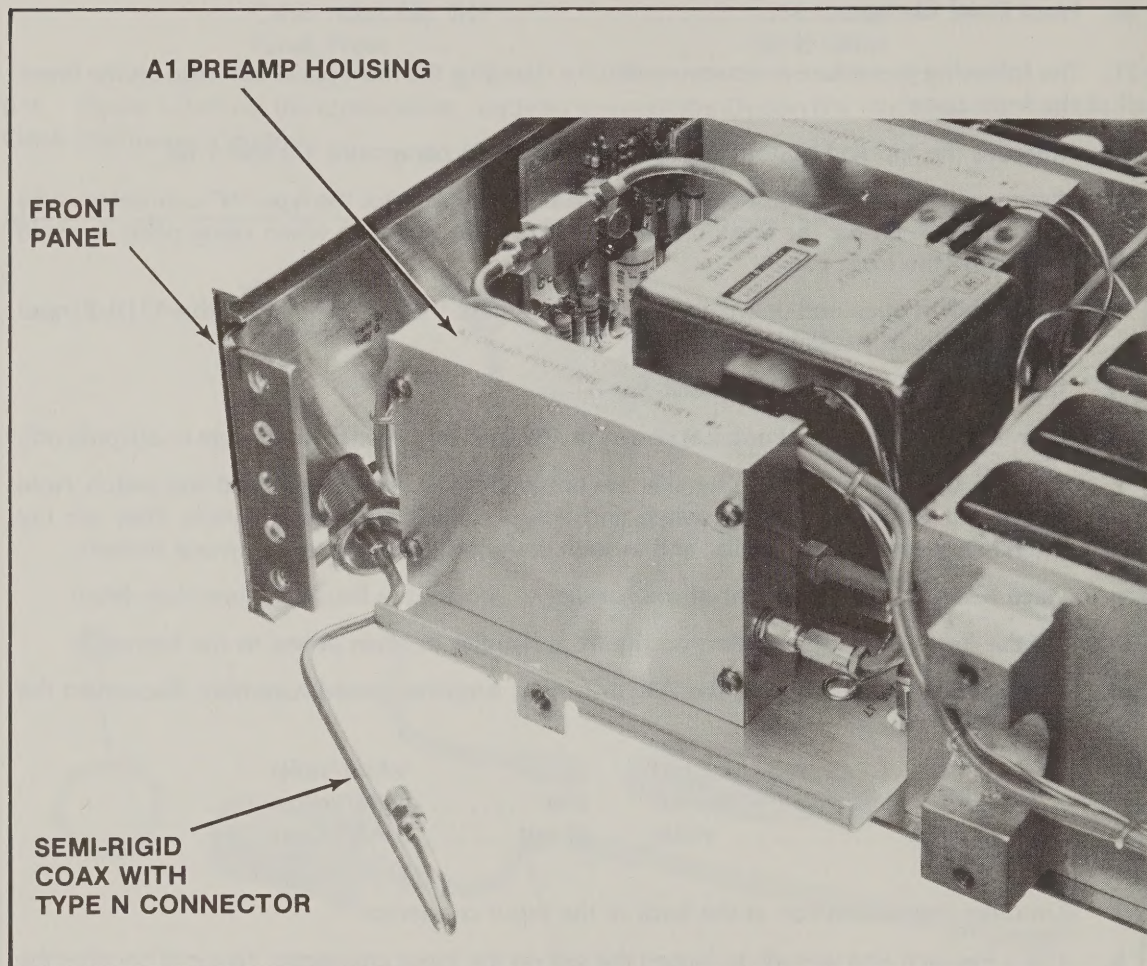


Figure 1-3. Type "N" Connector Installation for Option 006 (Side View)

- c. Connect the Microwave Limiter to the SMA end of the coax. Tighten with a 1/4-inch wrench held stationary at point ④, Figure 1-1, and a 5/16-inch wrench at point ③, Figure 1-1.
- d. Connect the remaining coax (item 4, Figure 1-2) to the 5088-7003 power splitter point ⑤, Figure 1-1, finger tight.
- e. Connect the Microwave Limiter at point ①. Tighten with a 1/4-inch wrench at point ①, Figure 1-1 (held stationary), and a 5/16-inch wrench at point ②, Figure 1-1.
- f. Tighten the SMA connector at point ⑤, Figure 1-1, with a 5/16-inch wrench. Hold the power splitter with your hand when tightening. The housing is easily damaged by wrenches or pliers.
- g. Install and tighten the 5/8-inch hex nut on the type "N" connector.
- h. Reinstall the cast aluminium side rail.

- 1-25. The Option 006 is now installed in the 5340A Frequency Counter.
- 1-26. Replace the Top and Bottom Covers.
- 1-27. Perform steps 10 through 12 of *Table 5-3*, In-Cabinet Performance Check.
- 1-28. Refer to *Table 1-1* for the new specifications for the 5340A with the Option 006 Microwave Limiter installed.



OPERATING AND SERVICE MANUAL
SPECIAL OPTION SUPPLEMENT

5340A OPTION H79
FREQUENCY COUNTER

This special instrument is a standard Hewlett-Packard Model 5340A Frequency Counter with special Option H79 which includes a combination of Options 005 and 006.

Option 005 provides extended frequency response up to at least 23 GHz with a minimum sensitivity of -10dBm over the frequency range from 18 GHz to 23 GHz when operated within an environment with an ambient temperature range of 17 to 27 degrees C.

Option 006 adds the Microwave Limiter which is fully described in the separate Operating and Service Manual for Option 006.

Combination of Options 005 and 006 reduces the CW DAMAGE LEVEL (specified in Option 006 manual) to +34.8 dBm (3W) over the extended 18 GHz to 23 GHz range. Add this information in the "Specifications" table in the Option 006 manual.

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